

# **Southern Kansas Outbreak Summary**

## ***NWSO Wichita, Kansas***

A destructive tornado moved through south-central Kansas on the evening of May 3, 1999 (see Figure 1). The hardest hit area extended from Haysville northward into the southern sections of Wichita. NWSO Wichita provided accurate information on the tornado as it developed in northern Sumner County and moved north into Sedgwick County. As the tornado tracked towards the southern sections of the city of Wichita, it veered to the northeast, sparing a strike on the center of the city.

### **Summary of Warning and Forecast Services**

Early in the day, the operational staff was aware that there was potential for severe thunderstorms on Monday evening, May 3. The SPC included the area in a slight risk for severe thunderstorms in the 7 a.m. Day 1 SWO. Following the 11:15 a.m. Day 1 SWO, elevating the potential to a moderate risk, NWSO Wichita issued a Hazardous Weather Outlook (HWO) at 12:18 p.m. for the potential of severe thunderstorms and the possibility of isolated tornadoes. At 3:49 p.m., the SPC upgraded the Day 1 SWO to indicate the high risk for severe thunderstorms in central Oklahoma and central Kansas.

A NOW was issued at 4:12 p.m., announcing the expected development of thunderstorms between 5 p.m. and 7 p.m. stating,

**“SOME OF THE THUNDERSTORMS WILL BE SEVERE...PRODUCING LARGE HAIL AND DAMAGING WINDS. ISOLATED TORNADOES ARE ALSO POSSIBLE.”**

Another NOW was issued at 6:38 p.m. indicating,

**“THUNDERSTORMS WILL DEVELOP RAPIDLY THIS EVENING.... NOW IS THE TIME TO REVIEW YOUR SEVERE WEATHER SAFETY PLANS.”**

Thunderstorms developed rapidly over south-central Kansas between 6:45 p.m. and 7 p.m. The shift supervisor called to request SKYWARN activation around 7 p.m. At 7:17 p.m., NWSO Wichita issued a severe thunderstorm warning for Harper County, based on the potential for large hail, as indicated by the WSR-88D. The SPC issued Tornado Watch #200 at 7:21 p.m., valid from 7:30 p.m. to midnight.

At 7:19 p.m., the Wichita WSR-88D malfunctioned. The shift supervisor initiated immediate remedial actions by calling the OSF Hotline. Next, he attempted to correct the failure by working with the OSF from the Radar Data Acquisition site. In the intervening time, the other

forecaster initiated a dial back-up to the Vance Air Force Base (AFB) radar to ingest imagery on the PUP. At 7:38 p.m., the Vance AFB WSR-88D indicated strong rotation in Sumner County, and a tornado warning was issued by NWSO Wichita valid until 8:15 p.m. for northern Sumner County.

Since NWSO Wichita was dialed into the Vance AFB WSR-88D via the PUP, radar imagery was not available on AWIPS. The full capability of WarnGen, the AWIPS-resident warning generation tool, cannot be realized without current radar imagery. Therefore, the staff used the back-up PC-resident software (Warning and Interactive Statement Editor, version II [WISEII]) to issue severe weather warnings. It should be noted that AWIPS Build 4.2, which will be installed at all NWS offices this summer, will have a continuous dial capability to nearby radars allowing forecasters to use the full capability of WarnGen if the primary WSR-88D should malfunction.

A severe thunderstorm warning was issued for Sedgwick County at 7:49 p.m. based on a spotter report of dime-size hail at 7:45 p.m. near Haysville. The storm later produced golfball-size hail in the city of Wichita. Based on radar data from the Vance AFB WSR-88D, which depicted a dramatic increase in the rotational velocities within the mesocyclone, NWSO Wichita issued a tornado warning for northern Sumner County and southeast Sedgwick County at 8:16 p.m., valid until 9:20 p.m. The warning was corrected 2 minutes later to indicate the warning was for northern Sumner and *eastern* Sedgwick County. The tornado warning was relayed from NWSO Wichita to the Sedgwick County EOC at 8:17 p.m. The 911 dispatcher activated the siren system and initiated an all-channel cable override for Wichita.

A tornado entered Sedgwick County moving north at 30 mph from Sumner County. Damage was rated at F1 as it crossed into Sedgwick County about 8:30 p.m. Around 8:35 p.m., the tornado struck the town of Haysville with F2 to F3 intensity. An isolated section in north Haysville suffered F4 damage.

An SVS issued at 8:33 p.m. read,

**“TRAINED SPOTTERS AND RADAR INDICATED A TORNADO ON THE GROUND NEAR PECK ON THE SUMNER/SEDGWICK COUNTY LINE. THIS TORNADO WILL PASS THE KANSAS TURNPIKE JUST SOUTH OF HAYSVILLE AT ANY TIME.”**

Another SVS issued at 8:46 p.m. asserted,

**“AT 8:43 P.M. ...DOPPLER RADAR INDICATED A TORNADO ENTERING SOUTH WICHITA...FROM THE HAYSVILLE AREA. ...A TORNADO WAS REPORTED IN HAYSVILLE WITH STRUCTURAL DAMAGE AROUND 8:35 P.M. PERSONS IN WICHITA SHOULD TAKE SHELTER IMMEDIATELY.”**

As the tornado turned to the northeast, it moved across the southern sections of the city of Wichita. The SVS issued at 8:52 p.m. noted,

**“TRAINED WEATHER SPOTTERS REPORTED DAMAGE FROM A TORNADO AT MACARTHUR AND SENECA ROAD. THIS DANGEROUS STORM WILL CONTINUE TO MOVE NORTH AT 30 MPH THROUGH THE MIDDLE OF WICHITA.”**

From the damage path and reports from spotters, the tornado lifted about 8:53 p.m. in eastern Sedgwick County. A chronology of the products issued by NWSO Wichita and the SPC is given in Appendix D.

## **Public Response**

Warnings and statements, disseminated by the National Weather Service via the NWS, FOS and NWR, were relayed by the local radio and television stations. Extensive coverage on local television and radio allowed for widespread awareness of the approaching tornado. On-site interviews were conducted in Haysville where the tornado did considerable damage. Those interviewed said the warnings were very good, stating that the siren lead time was 10 to 15 minutes. Residents followed severe weather safety plans and took cover in the lowest levels of the houses or apartments. Several had time to invite neighbors to their basements. No fatalities occurred in automobiles. There were no reports of travelers seeking shelter under overpasses.

Additional interviews with those affected by the storm indicated that radio station KFDI provided effective weather information of the approaching tornado. A telephone interview was conducted with a reporter from KFDI AM/FM radio in Wichita who commented that the products and services from the National Weather Service were timely. He believed that the report of the tornado in Sumner County at 7:40 p.m. elevated the awareness of the station and the listeners.

## **Post-Storm Feedback**

The Sedgwick County Emergency Management team cited several National Weather Service products as being valuable in preparing the county emergency staff for this tornado event. These included the Day 1 and Day 2 SWOs from the SPC and the HWO issued at 12:18 p.m. by NWSO Wichita. The NOW issued by NWSO Wichita at 4:12 p.m., predicting the expected development of thunderstorms between 5 p.m. and 7 p.m. with the potential for isolated tornadoes, heightened awareness. Also, the tornado warning for Sumner County at 7:38 p.m. elevated public awareness of the tornado potential for the Wichita area, enhancing the effectiveness of the response to the 8:16 p.m. tornado warning for southeast Sedgwick County.

Just before the issuance of the tornado watch around 7:15 p.m., the Sedgwick County Communication Officer initiated spotter activation. The county EOC monitors the weather warnings and forecasts through EMWIN. Two other video monitors are used to view cable television delivery of radar imagery on Cable TV channels 51 and 52. The county EOC also has a Data Transmission Network and NWR with the SAME feature.

The Sedgwick County EOC has the lead responsibility for siren activation in Wichita. The county EOC is co-located with the 911 Dispatch. There is a direct line between NWSO Wichita and the communication center. Sirens were activated upon receipt of the tornado warning at 8:17 p.m. The county EOC staff was very complimentary of the relationship with the NWSO and the services provided during this event.

The WCM began the first field survey of damage in Sedgwick County Tuesday afternoon, May 4. An aerial assessment was made by the WCM during a fly-over of the damage path in a police helicopter. From the aerial survey, it was determined that portions of the damage track were category F4. A lead forecaster from Wichita conducted a ground survey of damage in Sumner County on Wednesday, May 5. A ground survey of the damage in Sedgwick County was conducted by the WCM and a member of the Service Assessment Team on Friday, May 7. By that time, the damaged area was contaminated by removal of debris and bulldozing efforts.

To reduce the influx of media inquiries, the WCM prepared a well-worded PNS Tuesday morning, May 4, listing pertinent details of the previous evening's event. This PNS was released at 9:30 a.m. and was deemed valuable in minimizing follow-up interviews from the media.

A follow-up press release was issued by the WCM at 4 p.m. as a PNS on Tuesday, May 4. In this release, the WCM announced the damage was assessed as category F4. The press release contained pertinent information on the damage path and the timetable of warnings and statements issued by NWSO Wichita. On May 6, NWSO Wichita posted a tornado track map on its Web page.

Interviews were conducted with the staffs of all three major TV network affiliations (KAKE-TV10 ABC, KWCH-TV12 CBS, KSNW-TV3 NBC) in Wichita. These television stations indicated that NWSO Wichita performed an excellent service with effective warnings and statements. All three TV stations broke into programming after the issuance of the 7:38 p.m. tornado warning for Sumner County. Continuous on-air television coverage began in the 8:16 to 8:22 p.m. time frame and continued for 1 ½ hours.

As was the case in the Oklahoma City area, effective warnings and follow-up statements by NWSO Wichita served the public very well during this event. It is noteworthy that these services were provided despite the malfunction of the Wichita WSR-88D, about 1 hour before the event. The NWSO Wichita staff is commended for their proficiency in using back-up procedures.